

### ABSTRACT OF THE DISCLOSURE

A vacuum apparatus of an ion implantation system having an ion generator includes a vacuum pump evacuating the interior of the ion generator, a vacuum line connected between the vacuum pump and the ion generator, at least one first type valve connected to the ion generator and the vacuum line for injecting an inert gas into the ion generator and the vacuum line to equalize internal and external pressures of the ion generator and the vacuum line and to remove the air from the interior of the ion generator and the vacuum line, so that oxygen does not react with an inflammable impurity inside the ion generator, and at least one second type valve connected to the ion generator for being closed or opened to maintain a pressure of the ion generator to a predetermined vacuum level.